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ABSTRACT

The purpose of this study is to clarify the role of internal and external factors in elementary and secondary school principals' perceptions of on-the-job stress. Variables include school location, school type, the principal's gender, and the principal's work experience. Of 300 questionnaires mailed out to New York State school principals, 235 were returned, including 72 urban, 85 suburban, and 78 rural school principals from 114 elementary and 121 secondary schools. According to the modified Administrative Stress Index used for the study, principals generally perceived a greater amount of job stress from interactions with external groups, such as parents and union representatives, than from interactions with superordinate internal groups, such as school board members and superintendents. Results confirm the findings of previous studies, however, indicating that interactions with subordinate internal groups, especially teachers, generate the greatest amount of stress. School location, school type, the principal's gender, and the principal's work experience were not found to be significant variables. The study also confirms previous findings that the majority of principals do not consider their jobs highly stressful. Findings are summarized in 13 tables and charts. (JBM)

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A STUDY OF SUPERORDINATE, SUBORDINATE AND EXTERNAL ROLE RELATIONS AS DETERMINANTS OF PRINCIPALS' PERCEPTION OF ON-THE JOB STRESS

Alice M. Jones

EA 015 859

Paper presented at the Annual Meeting of the American Educational Research Association, April, 1983, Montreal, Quebec, Canada.

BACKGROUND AND NATURE OF THE PROBLEM

Most literature reviews and research projects on organizational stress have examined managers and other workers in business and industrial organizations. One of the least explored areas is the impact of stress on managers in educational organizations, especially as it relates to public school principals.

Koff et al., states "much like their counterparts in business, principals' jobs are open-ended with no definitive work hours (1980, p. 2)". They emphasized that these hours result in fatigue from overwork, and are related to stress-related illnesses such as cardiovascular problems, high blood pressure, and irregular heart-beats, as well as ulcers, anxiety and depression. The potential danger to persons in decision-making roles provides sufficient reason to examine stress as it relates to principals.

Stress in the role of school administrators has been the subject of several researchers. The research in this area.

concentrated on describing general areas of concern to principals and how these relate to stress experienced on the job (Swent, 1978; Tung and Koch, 1980; Gmelch et al., 1982; Koff et al., 1980).

Koff et al., (1980) recently noted that forced teacher resignations, dismissals, and unsatisfactory performance by professional staff top the list of events that bring stress to school principals. Other studies emphasized that principals' stress resulted from interpersonal interaction with various groups such as the school board, superintendent, teachers, parents, and various individuals and/or groups outside of the organization (Tung and Koch, 1980 and Gmelch and Swent, 1982). These writers suggested that principals' perceived level of on-the-job stress are affected by their role activities with individuals and/or groups internal and external to the organizational system. However, to date, there is scant evidence to indicate the extent to which perceived stess is related to these role relations and whether there are differences among the several potential stressors as they actually affect the principals' perceived level of on-the-job stress.

The purpose of the study was to clarify the extent to which elementary and secondary school principals' perceived level of on-the-job stress are related to their role relationships with groups internal and external to the organization. Principals' relations with three role groups were examined: (1) internal-superordinates, (2) internal-subordinates, and (3) external roles. The study further examined the effects of two demographic characteristics: location of school (urban, suburban, and rural), and type of school (elementary and secondary); and two personal background characteristics: gender, and years of experience on principals' perceived level of over-all job stress.

METHODOLOGY

Sample

Procedures for investigation included the selection of practicing public elementary and secondary school principals throughout New York State. The population was stratified by location and type of school in order to reflect the desired composition of public school principals. Of the 300 questionnaries mailed out, 235 were returned. The respondents included 72 urban, 85 suburban, and 78 rural school principals.

The 235 practicing administrators also included 114 elementary and 121 secondary school principals.

Table 1 presents the distribution of principals participating in this study. The majority (51 percent) of the respondents are secondary school principals. Eighty-six percent of the participants are males; whereas, 14 percent are females. The New York State Department of Education (1979-80) reported a similar percentage breakdown (88 percent male and 12 percent female) of principals by gender across the state. This report pointed out that six percent of the secondary school principals in New York State are females. Thus the three percent secondary female school respondents in the sample are congruent to the overall population in this category. However, the female secondary school sample participating in this study is not sufficient for this investigation. Therefore, this additional variable is tested only on the female elementary school respondents.

Instrumentation

A modified Administrative Stress Index was used to measure the independent variable of (a) superordinate, (b) subordinate and (c) external role relationships. This instrument was

Table 1

Selected Characteristics of Principals
Responding to Questionnaire

Characteristics	Frequency N=	Percentage %=
Location of School		
Urban	72	30.6
Suburban	84	35.7
Rural	79	33.6
Type of School		
Elementary	114	48.5
Secondary	120	51.1
Gender		
Female	33	14.0
Male	202	86.0
Years of Administrative Experience		
1. Less than 1	4	1.7
2. 1-2	5	2.1
3. 3-5	12	5.1
4. 6-10	49	20.9
5. 11-15	86	36.6
6. Over 15	79	33.6
Years in Current Position		
1. Less than 1	17	7.0
2. 1-2	24	10.0
3. 3-5	49	21.0
4. 6-10	56	24.0
5. 11-15	47	20.0
6. Over 15	42	18.0

developed by Swent (1978) specifically for public school administrators. The Administrative Stress Index (ASI) is a modification of Indik, et al. 's, (1964) fifteen-item index of Job Related Strain (JRS). Swent utilized twelve items from the JRS and added items of his own to yield thirty-three items with the following five-point Likert-typed response categories: rarely or never bothers me (Coded 1), occasionally bothers me (Coded 3), and frequently bothers me (Coded 5).

The foci of this study required a different clustering or grouping of the items than that used in earlier studies with the ASI. This reclustering was accomplished through a three-step process. First, twenty-five practicing administrators were asked to place the items into one of three categories. The categories were: (a) items that asked about stress due to interactions with superordinates; (b) items that asked about stress due to interaction with subordinates; (c) items that asked about stress due to interaction with external groups.

Based on the piloting of the instrument, the ASI was modified slightly and then given to a second group of seven administrators. These administrators were also asked to

place the items of the ASI into one of three categories.

The third and final step for verifying the clustering of the items was the examination of the internal reliability of each category (or subscale) for the total sample. The results of this analyses are presented in Table 2. The coefficient alphas reflect a very high coefficient of internal consistency. The coefficient alphas were all .70 and above.

Table 2

Subscale Means, Standard Deviation and Coefficient Alphas for Newly-Developed Subscales

Subscale	X	S.D.	Alpha
Superordinate	2.05	.68	.84
Subordinate	2.31	.62	.81
External	2.26	.66	.70

The dependent variable of over-all job stress was measured by using a combination of three items that indicated the perceived level of stress experienced on the job. The exact wording is presented in figure 1. Each item was answered by circling one of the five possible responses.

Figure 1

Overall Job Stress
(N=235)

Items					
1. To what extent do you find stress at work?	1 slight	2	3 moderate	4	5 high
2. To what extent is stress at work persistent and enduring over time?	1 slight	2	3 moderate	4	5 high
3. How frequently do you experience stress in your work?	1 slight	2	3 moderate	4	5 high

Respondents often chose to circle space between numbers. Therefore, in scoring the questionnaire, each item received a score value that ranged from 1-9.

RESULTS

Principals' perceived levels of stress from the following three role relationships were examined:

1. Superordinates - principals' role relationship with board of education, superintendent, and central office staff (line positions).
2. Subordinates - principals' role relationship with teachers, support staff, paraprofessional and students.
3. External - principals' role relationship with those individuals and/or groups outside of his/her span of authority; e.g. parents, union representatives, state and federal government representatives, special interest groups, etc.

Table 3 describes the differences in principals' perceptions of stress from internal and external sources. There were two internal subscales on the modified ASI. Each internal subscale, as well as the average of the two subscales, are reported.

Table 3

Differences in Perceived Stress From Internal And External Sources of Total Group

(N=235)

Source	*Mean	S.D.	t-value	**Significance Level
Internal				
Superordinate	2.05	.68		
Subordinate	2.31	.62	-6.47	.0001
Total Internal	2.18	.57		
External	2.28	.66	-3.07	.002

*Note: 1=low value (seldom occurs); 5=high value (frequently occurs)
**Two-tailed probability

Table 3 illustrates that the total group of principals feels the greater amount of job stress comes from interactions with external groups than with internal groups. However, such an interpretation of the data does not tell the whole story. When we look at each of the two internal subscale scores (superordinate and subordinate) we see significant differences between perceived stress arising from the principals'

interactions with these two internal groups. Hence, it is too simplistic to say that principals perceived more stress from external groups in comparison to internal groups. What the data really show is that, if stress occurring from interaction with external groups (2.28) is compared to stress occurring from interaction with superordinates (2.05), then the external stress is significantly greater. However, if stress from interaction with external groups (2.28) is compared to stress from interactions with subordinate groups (2.31), the interactions with subordinate groups generate the greater amount of stress. Thus in reality, there is a three-tier role relationship to consider.

Table 4 presents the correlations between the over-all job stress score, (a combination of duration, persistence, and extent) and each of the subscale scores. There is a positive relationship between stress from these role relationships, and principals' over-all job stress rating. The stronger correlation of the two internal groups occurred when the principals' over-all job stress scores were correlated with the subordinate subscale score. This subscale

Table 4

Pearson Product Correlations Between
Job Stress and Role Relationships Subscales

(N=235)

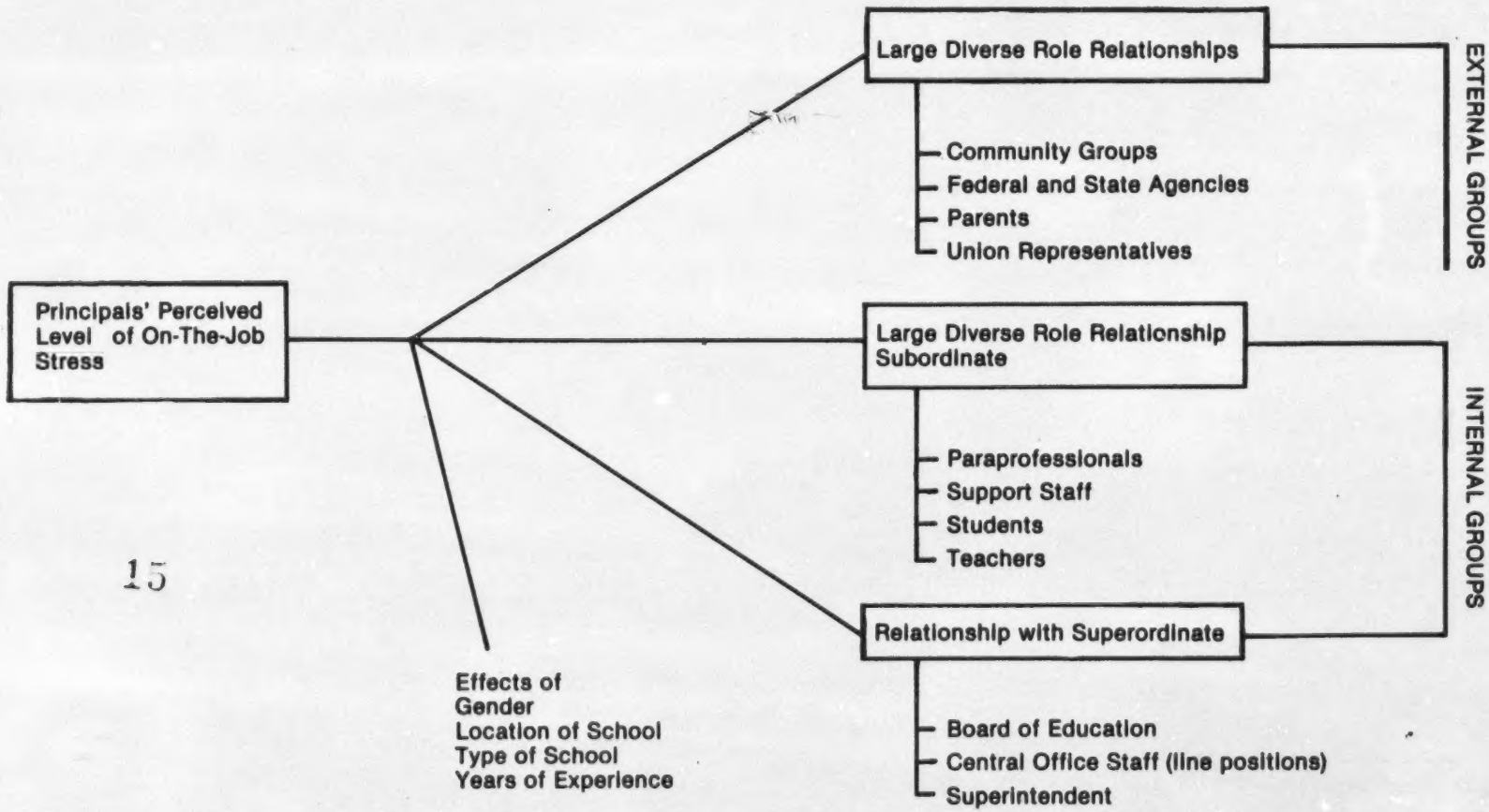
Subscale	Mean	r with Job Stress	Significance Level
Superordinates	2.05	.42	.001
Subordinates	2.31	.45	.001
Total Internal	2.18	.49	.001
Job Stress	15.25	1.000	----

score accounts for about 1/5 of the variance in job stress scores. The model presented on page 13 shows that subordinate role relationship is the largest and most diverse role group within the organization. The largest portion of the principal's day is spent in role relationship activities with these individuals. Hence it is understandable that there is a stronger relationship between stress from interaction with subordinates and total job stress.

These findings support the results of Koff et al.'s (1980) study that the principals' highest stressor was

FIGURE 2

Model of Interaction Between Principals' Perceived Level of On-The-Job Stress and Role Relationships



conflict with teachers. It is interesting to note the relatively low mean score reported by principals when interacting with individuals in a superordinate role. This finding supports the notion that principals' most stressful situations occur with interactions with individuals within the school and not with interactions with central administration.

Personal and School Characteristics

Personal and school characteristic variables included in the study were gender, years of experience, type and location of school. When correlated against the subscale scores, one out of six of these personal and school characteristic variables was significant at the .05 level. Nor were significant differences found between these variables and overall job stress. However, some trends were noted.

Table 5 presents the differences in mean scores on all the stress variables for males and females. Only elementary school principals are included in this analysis due to the small number of female secondary school principals in the total sample.

Table 5

Perceived Stress Scores of Male and Female Elementary School Principal

Subscale	Males N=86 $\bar{X}$	S.D.	Females N=28 $\bar{X}$	S.D.	t-Value	Significance Level
Superordinate	2.08	.69	1.76	.76	1.97	.04
Subordinate	2.29	.60	2.14	.70	1.05	N.S.
Total Internal	2.19	.58	1.98	.66	1.71	N.S.
External	2.33	.66	2.14	.72	1.24	N.S.
Total Role Relationship	2.24	.56	2.02	.65	.11	N.S.
Job Stress	15.88	4.80	14.32	5.75	.20	N.S.

Female principals consistently reported lower stress scores in all subscale categories, indicating that there is a difference between the amount of stress perceived by female and male elementary school principals. Only one of the six subscale scores showed a significant difference between male and females. That subscale, subordinates, was that female principals report slightly lower perceived levels of stress. However, this difference is not significant.

According to McGrath (1970), past experience either in the form of (a) awareness of a situation due to previous exposure and/or (b) training to cope with the situation can significantly modify the level of subjectively experienced stress. Therefore, this study examined the relationship of both years in administration (i.e., vice principals, dean of students, department heads, etc.), and years in present position as they relate to principals' perceived levels of on-the-job stress.

Table 6 presents the job stress mean scores for various categories of years of administrative experience and years of experience in the current position.

Table 6

Job Stress Subscale Scores by Years of Experience

Experience Category		Mean*	S.D.	Correlation With Job Stress Score	Significance Level
Current Position					
Less than 1 year	N=17	14.59	6.44		
1-2 years	N=24	15.79	4.77		
3-5 years	N=49	15.39	4.49		
6-10 years	N=56	14.43	5.36		
11-15 years	N=42	15.33	4.88	.02	NS
Total Administrative					
Less than lyear	N=4	12.00	7.07		
1-2 years	N=5	16.20	6.10		
3-5 years	N=12	14.92	6.04		
6-10 years	N=49	15.51	4.84		
11-15 years	N=86	15.05	4.77		
15+ years	N=79	15.46	5.07	.04	NS

*Range of possible Scores for Job Stress is 3 - 27

FIGURE 3 **Job Stress Subscale Scores by Years of Experience**

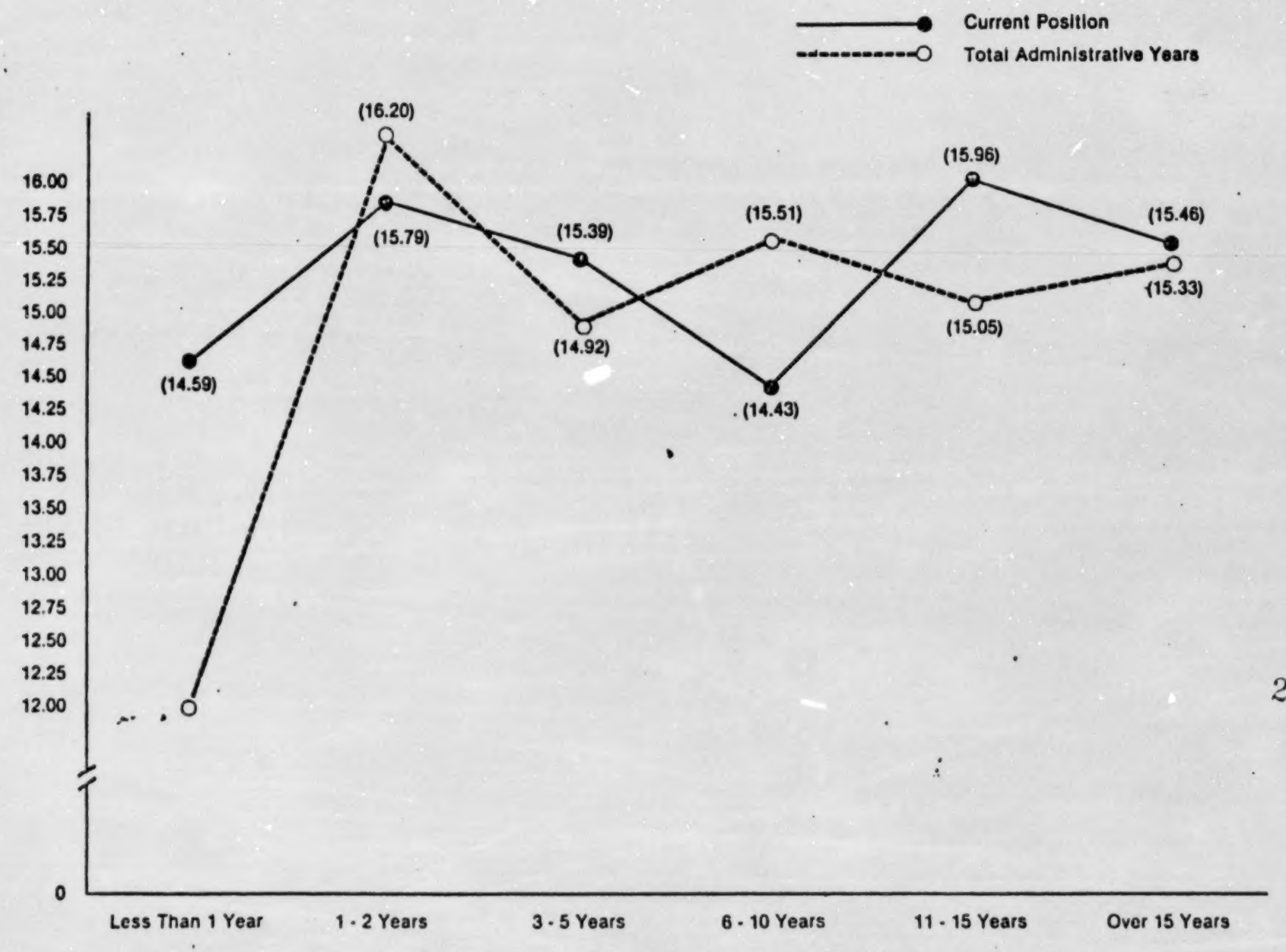


Table 7 presents the mean job stress scores by location of school. Table 7 also breaks down the sources of job stress subscales by each of the three locations: urban, suburban, and rural.

The data show that there is no significant difference between location of school and principals' perceived level of stress. Urban and suburban principals reported that their greatest stressors come from activities with subordinates. The rural principals perceived that their greatest source of stress came from task performance with external groups. This may be because often rural principals live in the community in which they work, thus creating a high level of visibility which tends to be stressful. These results support the popular belief that urban school principals work in a stressful environment. The media would lead us to believe that rural school principals work in a relatively calm environment in comparison to their urban peers. The findings from this study also show that urban school principals reported a higher level of over-all job stress than did their suburban and rural counterparts. Results of the ANOVA showed there is no significant difference by location of school. The data presented in Table 7 is again graphically illustrated in Figure 4.

Table 7

Job Stress and Sources of Job Stress Subscale Scores by Location of School

Subscale	Urban N=72 $\bar{X}$	S.D.	Suburban N=85 $\bar{X}$	S.D.	Rural N=78 $\bar{X}$	S.D.	Results of ANOVA
Superordinate	1.96	.68	2.02	.67	2.15	.68	NS
Subordinate	2.30	.61	2.24	.65	2.38	.60	NS
Total Internal	2.13	.58	2.14	.58	2.26	.55	NS
External	2.21	.71	2.21	.69	2.41	.58	NS
Total Role Relationships	2.15	.55	2.17	.58	2.31	.50	NS
Job Stress	15.78	4.79	14.55	4.98	15.51	4.81	NS

FIGURE 4

Subscale Scores by Location of School

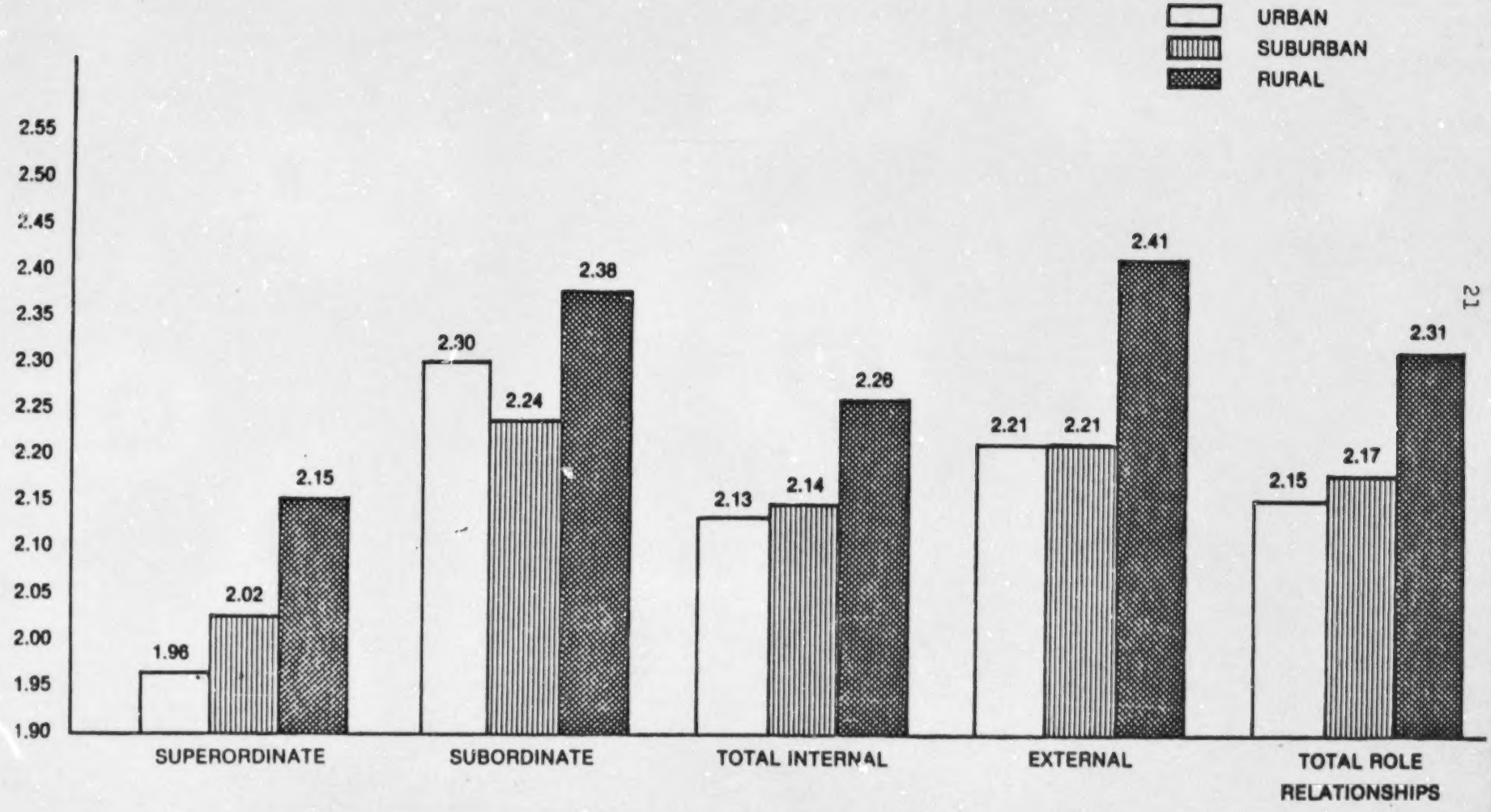


Table 8 presents the sources of job stress subscales broken down by level of school. Any differences shown were examined by the use of two-tailed t-test of statistical significance, and those results are also presented in Table 8.

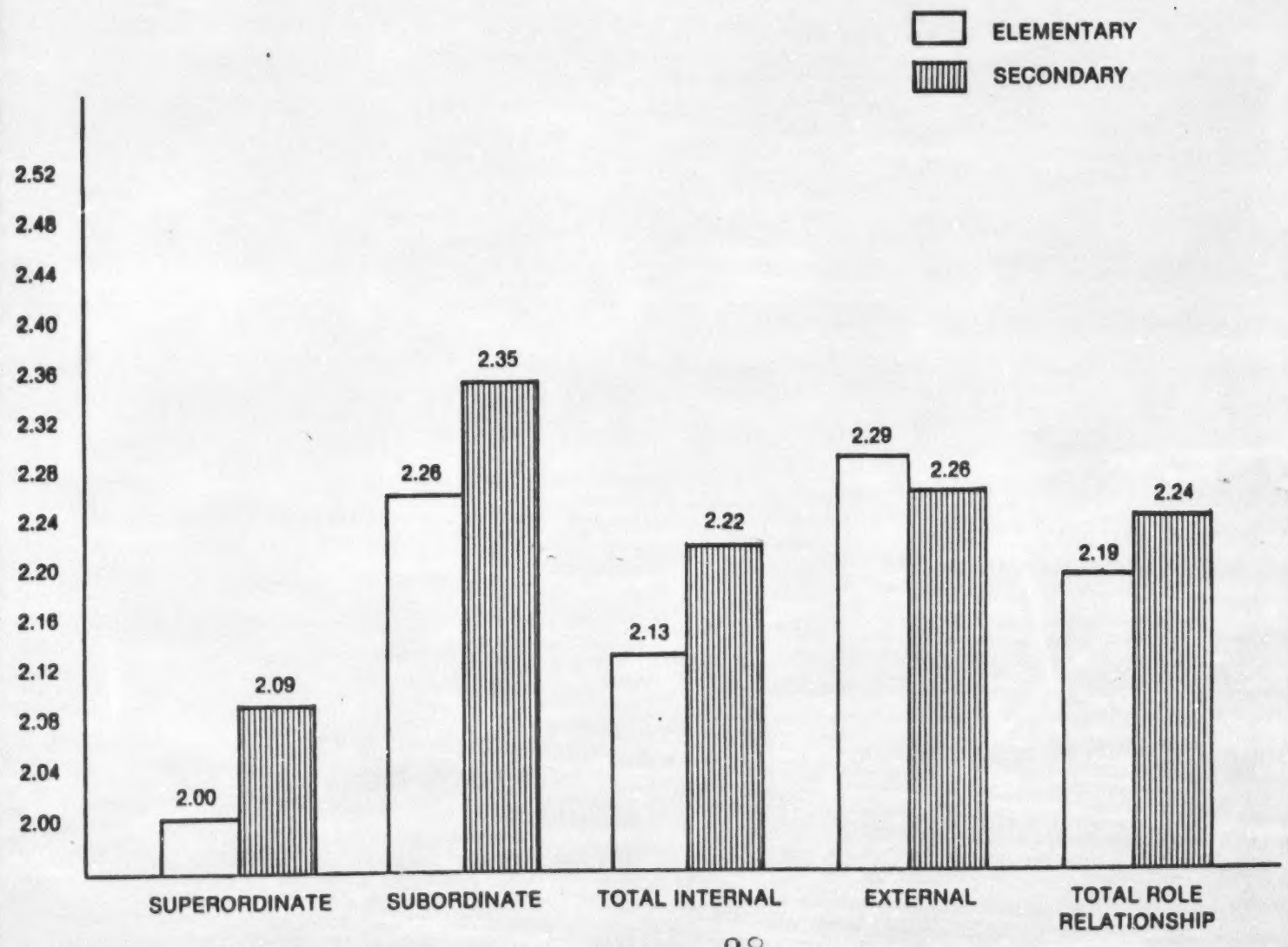
Table 8

Job Stress and Sources of Job Stress Subscales by Type of School

Subscale	Elementary (N=114) $\bar{X}$	S.D.	Secondary (N=121) $\bar{X}$	S.D.	t-Value	Significance Level
Superordinate	2.00	.72	2.09	.64	-.95	N.S.
Subordinate	2.26	.62	2.35	.61	-1.21	N.S.
Total Internal	2.13	.61	2.22	.54	-1.21	N.S.
External	2.29	.68	2.26	.64	-.25	N.S.
Total Role Relationships	2.19	.59	2.24	.52	-.73	N.S.
Job Stress	15.02	4.95	15.15	5.06	.74	N.S.

No significant differences were found between perceptions of sources of stress or over-all job stress between elementary and secondary school principals. However, there were some trends. Secondary school principals report higher, though not significantly different, scores in role activities with

FIGURE 5 **Subscale Scores by Type of School**



superordinates and subordinates. Whereas, the elementary school principals' greatest stressors came from role activities with external groups. Secondary school principals also reported a higher job stress score than their elementary counterparts.

DISCUSSION OF RESULTS

Summary

Results of the study indicated general support for the conceptual framework which stated that principals' perceived level of on-the-job stress is related to their role relations with groups internal and external to the organization.

Principals reported that the greater amount of job stress comes from interactions with external groups than with internal groups. However, such an interpretation of the data does not tell the whole story. When we look at each of the two internal groups (superordinate and subordinate), we see significant differences between stress arising from the principals' interactions with these two internal groups. Hence, it is too simplistic to say that principals perceived more stress from external in comparison to internal groups (see Table 3). We found that what the data really showed is that if stress occurring from interaction with external groups, then the external stress is greater. However, if stress from interactions with subordinate groups is compared to stress from

interactions with external groups, the interactions with subordinate groups generate the greatest amount of stress. Thus the analysis of the data depends on which of the major internal groups one is using as a comparison.

The results were consistent with Tung and Koch (1980) and Gmelch and Swent (1981), who reported that principals' stress resulted from interpersonal interaction with various groups such as the school board, superintendents, teachers, parents, and various individuals and/or groups outside of the organization.

The results are also congruent with Koff, et al., (1980) who indicated that forced teacher resignations, dismissals and unsatisfactory performance by professional staff top the list of events that bring stress to school principals.

The findings in this study showed that the majority of the principals do not perceive that they experience high levels of stress on the job for extended periods of time. The data showed that these stress-producing events are not frequent occurrences.

The present findings are consistent with other research in this area (Kiev and Kohn, 1979; Gorton, 1982). Perhaps one explanation for these findings is that public school principals are trained to meet the demands of the job, thus creating a slight imbalance between the perceived demand and perceived ability to respond to stress-producing events.

It was noted earlier that stress results when a person perceives a substantial imbalance between a given demand and his/her perceived ability to respond. Thus, one could argue that pre-service and/or inservice educational programs are meeting the needs of public school principals. This notion is supported by the results of years of experience as it relates to over-all job stress. This study showed that, regardless of years of experience, principals reported only a slight imbalance between the perceived demand and perceived ability to respond to stress-producing events.

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